International Journal of Environmental Planning and Management
Vol. 1, No. 1, 2015, pp. 1-4
http://www.publicscienceframework.org/journal/ijepm

The Environmental Concerns and Issues

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Abstract

Environment challenges and issues of Pakistan are associated primarily with an imbalanced social and economic development in recent decades. This challenge is further compounded with rapid urbanization due to a shift of population from rural to urban areas. Thus, all major cities of Pakistan face haphazard, unplanned expansion leading to increase in pollution. This unchecked growth has led to creation of slums areas around city peripheries and low lying area. Since the municipal authorities and utility service providers have limitations in extending their facilities, urban congestion is the prime reason of ever deteriorating ambient air and water quality, solid waste management and loss of biodiversity. Under the present scenario, Pakistan is facing rising difficulties in developing their management plans to cope impending environmental threats and provide adequate water and sanitation facilities and health services to ensure a healthy living environment.

Keywords

Pakistan, Environment, Hazards, Climate Change

Received: March 5, 2015 / Accepted: March 26, 2015 / Published online: March 30, 2015

1. Introduction

Environmental hazards have become a major international concern this century severely impacting the national, social and economic spectrum. Massive economic surge coupled with man-made intervention in the natural systems are the major causes behind these monster problem. Therefore, environmental concerns need to be the corner stone of all development considerations on various levels. Besides causing health problems, environmental issue in Pakistan has disturbed the balance between economic development and environmental protection [1]. Pakistan today faces major environmental issues ranging from climate change, energy, water, pollution, waste management, and biodiversity [2] .

Being a natural disaster prone, Pakistan in recent years has faced one of the deadliest floods and earthquake in its history where national capacity to overcome the natural calamity was seen wanting. With an ever increasing population posing a momentous challenge, in order to provide quality life infrastructure [3], existing environment management capacity of Pakistan cannot cope with such a large population threat. Therefore this paper aims to highlight the major environmental issues faced by Pakistan while bearing in mind that government efforts with meager resource inventory is facing marathon challenge to address environmental challenges which is an indicator to develop a wide spread support base and harness participation from other stakeholders including civil society, industry, as well as donors to efficiently counter the environmental concerns.

2. Pakistan Environmental Concerns

Water Pollution. The main water sources in Pakistan are rivers, glaciers, rainfall and groundwater. The rainfall pattern is extreme due to the varied topography of the country. Average rainfall is between 50 to 1000 mm but in the isolated northern mountains it may exceed 2000 mm. On the other hand the dry areas receive less than 125 mm on an average [2].

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Currently 70% of Pakistan water resource is being utilized by agriculture sector. Water pollution in Pakistan vis-à-vis its environmental dilemma, is a consequence of uncontrolled discharge of industrial (toxic metals, organic loads, and acids), domestic (organic liquids and solids containing bacterial heap) and agriculture waste in the form of pesticide and fertilizer run-off. All three causes adversely affect both surface and ground-water supplies with serious health hazards. Since 92% of wastewater is discharged untreated into different water sources like rivers, canal and sea therefore National Conservation Strategy (NCS) statistic highlight that 40% of deaths in Pakistan are related to water borne diseases [4,5].

Almost all chemical waste is dumped untreated into the river system from where it is taken out to sea. A large number of industries discharge deadly and toxic waste into storm-drains, open nullahs or into the rivers. These include leather tanning units, pharmaceuticals, petrochemicals, refineries, chemical, textile, paper and pulp, engineering works and thermal power plants [6]. The Lyari River has become a putrid and toxic gutter due to discharge of effluents. Solid waste also finds its way into the water system. In order to record the effect of industrial wastewater on Karachi's vegetation, environmental assessment was conducted at the SITE industrial area. The chemical analysis revealed that there were traces of heavy metals such as chromium and nickel in the vegetable samples. Invariably, this showed that that the industries were not using any pollution control measures whatsoever [7,8].

In Pakistan water is not taken as a “precious commodity” as minimal water charges are levied on the treated domestic or agricultural water. Moreover unregulated extraction of ground water for any purposes indicates poor water conservation management. Furthermore, uncontrolled discharge of sewage and contaminated water in water bodies not only affects marine production but use of such water for agriculture leads to contamination of the food products. Water borne diseases are the largest killers in the country and health problems resulting from polluted water cost a large amount of money. At present Karachi and Lahore produces approximately wastewater discharge of 300 and 240 mil gallons per day respectively. Indiscriminate use of pesticides and fertilisers ensure that agricultural run-off from fields also contributes to water pollution. Extensive use of agricultural chemicals has already started affecting aquifers.

The seas have been used as dumps for ages, mainly due to the misconception that they are so large, whatever is put into them gets diluted. However, the truth of the matter is that most of the contaminated water entering the sea has a density different to that of the natural seawater. This means that it does not mix and in fact settles down at the bottom of the ocean as sludge, which may be 1.5 foot deep in certain areas. Much of the water from the rivers finds its way down to the sea, taking with it all the toxic effluents. The Karachi Nuclear Power Plant (KANUPP) uses 150,000 gallons of seawater for cooling. Liquid waste and hot water from the plant is subsequently discharged into the sea.

Air pollution has also become a major problem in most cities. Main factors contributing towards degradation to air quality are increasing energy requirement and an unprecedented surge in transport sector. Uncontrolled use of low-quality fuel combined with huge number of vehicles plying on roads, significant air pollution has risen in cities causing serious health issues. The combined emissions of air pollutants has been estimated to cost Pakistan about Rs 15 billion per year from adverse health and other effects [Government of Pakistan (1992)]. Despite visible point source air pollution caused by brick kiln posing a a significant ,as compared to spatial-cum- non point sources like transport, it represent less of a threat to the overall health. During the last few years, huge traffic especially in the metropolitan cities has caused uncontrolled vehicular emissions, which account for 90 percent of pollutants. The National Conservation Strategy Report claims that the average Pakistani vehicle emits twenty-five times as much carbon monoxide, twenty times as many hydrocarbons, and more than three and one-half times as much nitrous oxide in grams per kilometer as the average vehicle in the United States. Data recorded at monitoring stations in various cities along with various studies undertaken by Environment Protection Agency (EPA) indicate presence of high concentration of suspended particulate matter. The level of concentration (particulate matter size below 2.5 micron) due to combustion sources has reached to an alarming point (Avg 3 times higher than the prescribed safety limit) [9].

Pakistan comprises 60 % arid land which annually receives less than 200mm rainfall. Average annual precipitation in Baluchistan and Sind provinces is about 160mm compared to 400 mm in Punjab and about 630mm in KPK therefore average return period of drought in these areas is 20-30% in every 10 years span. . In order to support livelihood, 60% of Pakistan’s rapidly increasing population is dependent upon dry-lands using agro-pastoral activities. However, due to poor land use management practices and increasing demand of natural resources (like in other developing nations) has severely affected dry lands in Pakistan as well, causing massive environmental concerns in ecosystems, excessive water logging causing soil erosion and salinity adversely affecting soil fertility / productivity , floods, loss of biodiversity etc. It is estimated that combination of increasing deposition in Tarbela (reducing its capacity has contributed in reduction of land productivity by 1.5-7.5% per year in Indus Plains [10].

Forests, scrub and planted trees on farmland constitute about 4.2

million hectares (4.8%) of the country (Forest Sector Master Plan GOP 1992 from Environmental Profile of Pakistan 1998). The existence of these forests in the watershed areas protect the fragile mountain ecosystem and help dissipate floods and droughts. These are major source of industrial timber, firewood and resin. The foothill forests are also subjected to over-grazing. Despite reported lowest per captia use of timber in Pakistan, the declining rate of forest biomass is the second highest in the world. Additionally the threat of overgrazing, over-harvesting and overstocking of the natural vegetation is depleting arid and semi-arid rangelands in Pakistan. Furthermore changing grazing pattern has virtually turned some areas in the Cholistan desert to sand dunes [11].

3. Climate Change and CHG Effect

Pakistan, along with some other developing countries, has been ranked as one of the most at-risk because of its vulnerability to climate change and lack of resources to respond. In developing countries, such as Pakistan, climate change poses a serious challenge to social, environmental and economic development, and lead to migration within and across national borders of Pakistan. Increased use of use of fossil fuels and other human activities has disturbed the natural balance of Greenhouse Gases (GHGs) in the atmosphere which is a great concern worldwide. In Pakistan its effect on climate change is posing a major threat to food water and energy security. The effects of global climate change in Pakistan are already evident in the form of growing frequency of droughts and flooding, increasingly erratic weather behavior, changes in agricultural patterns, reduction in freshwater supply and the loss of biodiversity. In short, climate change could hinder the achievement of many of the Millennium Development Goals (MDGs), including those on poverty eradication, child mortality, malaria, and other diseases, and environmental sustainability. Much of this damage would come in the form of severe economic shocks. Therefore, mitigating and adapting actions are considered to be the twokey ways of combating climate change [12].

4. Analysis

Being a natural disaster prone, Pakistan in recent years has faced one of the deadliest floods and earthquake in its history where national capacity to overcome the natural calamity was seen wanting. With an ever increasing population posing a momentous challenge, in order to provide quality life infrastructure, existing environment management capacity of Pakistan cannot cope with such a large population threat. In Pakistan ,environmental issues has caused roughly 1/3 of all child mortality highest in South Asia alongwith unending spread of other diseases like diarrhea and typhoid mainly due to insufficient water supply, poor sanitation and hygiene conditions which overall contribute in approx 30 percent of the cost of environmental damages. Continuous change of national environmental infrastructure from Environmental Ministry to Division has serious repercussion in terms of impending hazard management alongwith losing international support ., Consequently International donors and organizations working on climate change have shown their reluctance to fund different environmental development programmes in Pakistan. After successful representation by India and Bangladesh at the Bonn Conference to seek international funding, it appears Pakistan has been left isolated in the international community as no official representative from Pakistan was present to represent the case.

5. Conclusion

In order to successfully manage environmental threat in Pakistan, it is paramount to develop national international policy with strong institutional framework and capacity to alleviate these negative impacts in line with the best international practices. Despite increasing international attention, the environmental degradation issue is severely harming the public space and the state alike on policy fronts. Pakistan falls in the most vulnerable categories of climate change but we are doing nothing to cope with the challenge. The government should revive the climate change ministry and develop different viable projects to seek international funding for them. It is high time to tackle these problems failing which not only will the environment further deteriorate but also the food security of the country will come under severe threat.

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